

REMARKS

Claims 10 to 12, 14 and 16 to 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,659,538 to Leclercq (hereinafter “Leclercq”) in view of U.S. Patent No. 6,442,227 to Iacovino, Jr. et al. (hereinafter “Iacovino”).

Claims 10 and 16 are amended to more particularly and distinctly claim the invention. Claims 10 to 12, 14 and 16 to 18 are currently pending with claims 13 and 15 withdrawn as directed to a non-elected species. Since claims 13 and 15 are dependent on generic claim 10, claims 13 and 15 have not been cancelled and should be examined if claim 10 is found allowable.

Reconsideration of the application based on the following remarks is respectfully requested.

35 U.S.C. §103(a) Rejections

Claims 10 to 12, 14 and 16 to 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Leclercq in view of Iacovino.

Leclercq discloses an apparatus for limiting the effect of axial hydraulic flow force exerted on fuel assemblies of water-cooled nuclear reactors of the “type secured with a certain axial displacement, by means of centering pins fixed onto the upper and lower core plates of internal equipment and sliding in corresponding hollow cylindrical housings carried by the said assemblies.” (Col. 2, lines 34 to 39).

Iacovino discloses a sleeve assembly for a nuclear fuel racks. In particular:

The sleeve has at least one elongate wall extending from the topside of a sleeve base having an opposed bottom side. The sleeve base has a flow hole extending therethrough that communicates with one of the rack base plate flow holes. A pin assembly disposed in the sleeve base flow hole has resilient tabs extending beyond the bottom side of the sleeve base for extending into a rack base plate flow hole and resiliently engaging the rack base plate when the sleeve assembly is installed in one of the cells. The pin assembly resists horizontal and vertical movements of the sleeve assembly, permits water flow into the cell and permits sleeve assembly removal tools and inspection devices to access the pin assembly.

(Abstract).

Claim 10 recites in part, “each of the end pieces comprising at least two axial centering through-holes that are intended each to receive a centering pin of one of a lower core support plate and an upper core plate, wherein a resilient bush is configured for frictionally engaging the centering pin, for at least one centering hole” and the portion of the bush comprising the flexible arms having an outer diameter smaller than the diameter of the centering hole and an annular supporting surface that projects radially inside the bush in the free end portion of the flexible arms that have an inner diameter that is smaller than the diameter of the centering pins wherein the centering hole of the at least one end piece of the fuel assembly is constructed to have a diameter that is substantially equal to the outer diameter of the fixing portion of the resilient bush, and wherein the resilient bush is fixed in the through-hole of the at least one end piece.”

Claim 16, similarly to claim 10, includes the following limitation “an annular supporting surface that projects radially inside the bush in a free end portion of the flexible arms that have an inner diameter that is smaller than the diameter of the centering pins that are inserted into the through-holes of the end piece.”

As admitted in the Office Action on page 3, Leclercq fails to “teach the specifics of the claimed bush.” Both Leclercq and Iacovino fail to teach or disclose the limitation of “an annular supporting surface that projects radially inside the bush in the free end portion of the flexible arms that have an inner diameter that is smaller than the diameter of the centering pins” required by claims 10 and 16. The Office Action cites element 76 for support. However, intermediate part 76 of pin assembly 56 clearly projects outwardly from the bush and therefore cannot be inside the bush as claimed.

Also, there is no reason or motivation to one of ordinary skill in the art to modify Leclercq to include the pin assembly 56 of Iacovino. Pin assembly 56 of Iacovino is used to secure walls 52 to base plate 24 and does not receive any centering pin. Instead, pin assembly 56 provides alignment by mating with through-hole 46 in plate 24. Therefore, one of skill in the art would not look to Iacovino to teach the resilient bush as claimed in the present invention. Pin assembly 56 is quite different from the claimed bush, and one of skill in the art

would have no reason to modify the elastic sleeve 16 of Leclercq to include features of the metal pin assembly 56 of Iacovino. Furthermore, Leclercq is an “apparatus for limiting the effects of hydraulic flow force.” (Col. 2, line 24). Iacovino provides a sleeve assembly for fuel rack refurbishment. Pin assembly 56 of Iacovino is not adapted to withstand in-reactor temperature and pressure conditions through the whole fuel assembly lifetime and the hydraulic thrusts of cooling water passing through a fuel assembly, but instead is merely used in a pool at limited temperature, without pressure, with a slow water stream and only a residual neutron flux. Therefore one of skill in the art would have no reason or motivation to combine the pin assembly 56 of Iacovino with the disclosure of Leclercq.

Withdrawal of the rejection of independent claims 10 and 16 under 35 U.S.C. §103(a) and the dependent claims 11, 12, 14, 17 and 18 is respectfully requested.

CONCLUSION

It is respectfully submitted that the application is in condition for allowance and applicants respectfully request such action.

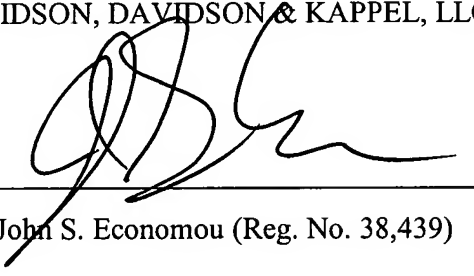
If any additional fees are deemed to be due at this time, the Assistant Commissioner is authorized to charge payment of the same to Deposit Account No. 50-0552.

Respectfully submitted,

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